

“‘Though this be madness, yet there is method in’t.’”
(William Shakespeare, ‘‘Hamlet,’’ Act 2, Scene 2)

“‘Carpe Diem’”
(Horace, Ode I-XI)

The Big Idea

Motion pictures and novels captivate because they tell stories of the protagonist’s personal growth or, less frequently, his downfall. I challenge you to name a single movie in which this personal growth happens without—and is not measured against—contemporaneous or anticipated interactions with other people in society. In this course, we embark on a treasure hunt for universal metaphors by examining with compulsive precision simple interactions in imaginary societies. This is what filmmakers do, too, but they are willing to compromise on compulsive precision.

Topics

The following selection of topics is not stable but should give you a rough idea of what we shall be talking about in this course:

1. The Single-Person Decision Problem
2. Uncertainty and Time
3. The Game
4. Rationality, Beliefs, Knowledge, and Common Knowledge
5. Perfect Foresight and the Nash Equilibrium
6. Nash Equilibrium in Mixed Strategies
7. Extensive-Form Games
8. Credibility and Sequential Rationality
9. Multistage Games
10. Repeated Games

11. Static Games with Incomplete Information
12. Dynamic Games with Incomplete Information
13. Reputation
14. Signaling
15. Information Transmission.

Additions to and subtractions from the topic list above will occur.

Suggested Reading

The course textbook is Steven Tadelis's *Game Theory: An Introduction*. You are strongly encouraged to read the relevant chapters both before and after the lectures. While you are getting hold of the book, you can access the first two parts posted by the Princeton University Press [here](#) and [here](#). (But don't go [here](#)).

For a more compact and more advanced treatment of the topic, you may consult Martin Osborne and Ariel Rubinstein's freely available textbook *Game Theory*. If you feel like you must pay for the book for it to work, you can buy it [here](#). Another popular but similarly advanced textbook is Jean Tirole and Drew Fudenberg's *Game Theory*. This over [here](#) notwithstanding, the book is not in the public domain. It is hard to reinvent the fundamentals of game theory, so all textbooks cover more or less the same ground and are old. Take your pick.

Terms and Conditions

1. The class meets on Mondays and Wednesdays at 2pm in Lattimore 201.
2. The recitations are held on Mondays at 3:15pm in Lattimore 201.
3. My office hours are held in my office at the Wallis Institute in Harkness Hall.
4. This course has three TAs: Matteo Bertoli (mbertol2@ur.rochester.edu), Shusuke Ioku (sioku@ur.rochester.edu), and Marton Szabo (mszabo2@ur.rochester.edu). They will be responsible for holding recitations and grading.
5. My office hours will be held on Mondays from 1pm to 2pm in my office at the Wallis Institute in Harkness Hall.

6. No late coursework will be accepted.

Assessment

The final grade is composed of the student's performance in:

1. About half a dozen problem sets (20%)
2. The first in-class mid-term exam (20%)
3. The second in-class mid-term exam (20%)
4. The final exam (40%).

The grading scheme does not require scoring anywhere near 100% in order to earn a good grade. Earning a good grade neither suffices nor is required for becoming a good person, although earning a good grade will take you closer to this coveted goal.